

U.S. Patent Application Serial No.: 10/523,975
Response to Final Office Action mailed November 3, 2009

REMARKS

Applicants' attorney wishes to thank the Examiner and her supervisor for the courteous and helpful interview of January 26, 2010 during which the present claim amendments and the prior art were discussed.

The claims have been amended in order to more particularly point out, and distinctly claim the subject matter which the applicants regard as their invention. The applicants respectfully submit that no new matter has been added.

Independent Claim 1, as amended, is to a method of automatically marking an article which is transferred in one direction, including the steps of storing in advance a pattern for coloring an outer surface of the article with a plurality of coloring agents of respective colors different from each other, detecting a transfer speed of the article, supplying the coloring agents, supplying pressurized gas into a coloring agent supply source, and spouting a plurality of the coloring agents of respective specific amount, as a drop, to form spots on the outer surface of the article, from a plurality of separate and spaced nozzles, for each respective color, arranged in a longitudinal direction of the article being transferred, each nozzle having a separate coloring agent supply source connected therewith and a valve between the nozzle and the coloring agent supply source, toward the outer surface of the article according to the pattern in response to the detected transfer speed, where the coloring agents, as a drop, are spouted toward the outer surface of the article with the aid of bias of the supplied pressurized gas. Independent Claim 3, as amended, is to a device for automatically marking an article which is transferred in one direction, including storing means for storing a pattern for coloring an outer surface of the article with a plurality of coloring agents of respective colors

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different from each other, detecting means for detecting a transfer speed of the article, a plurality of separate and spaced nozzles, for each respective color, arranged in a longitudinal direction of the article being transferred, each nozzle having a separate coloring agent supply source connected therewith for supplying the coloring agent to the corresponding nozzle and a valve provided between the nozzle and the coloring agent supply source, for spouting the coloring agents of respective colors different from each other of respective specific amount, as a drop, to form spots on the outer surface of the article, toward the outer surface of the article, and control means to make a plurality of the nozzles spout the coloring agent, as a drop, toward the outer surface of the article according to the pattern in response to the transfer speed of the article detected by the detecting means, and a pressurized gas supply source connected to the plurality of the coloring agent supply sources for supplying pressurized gas to the plurality of the coloring agent supply sources, where when the valve is opened, the coloring agents existing in the nozzles are spouted, as a drop, toward the outer surface of the article with the aid of bias of the pressurized gas supplied from the pressurized gas supply source. All other claims depend directly or indirectly from Claims 1 and 2.

In the Office Action, Claims 1-9 were rejected on the basis of obviousness under 35 U.S.C. § 103(a) with Claims 1-8 rejected on the basis of a combination of Katschnir (U.S. 4,503,437) with Gemelli (U.S. 3,068,838), Kobayashi (U.S. 6,328,488) and Richardson (U.S. 2,749,880) and Claim 9 rejected on the basis of those four references combined further with Traut (U.S. 5,237,917). Reconsideration and removal of these rejections are respectfully requested in view of the present claim amendments and the following remarks.

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In response to the arguments presented in the July 27, 2009 amendment filed, the Office Action responds that while it is argued that Katzschner does not teach nozzles separated and spaced from each other, Gemelli teaches such a feature.

In response to the argument that there is no suggestion to combine the references, the Office Action alleges that combining the spiral stripe forming Gemelli device in combination with Katzschner is to print the cable without rotating the cable and for speeding the process.

While it was argued that Kobayashi should not be combined with Katzschner and Gemelli, and that the Office Action's conclusion of obviousness is based upon improper hindsight reasoning, it is alleged that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But, so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. Such is not the situation here.

With respect to the argument that the use of four references is unreasonable, the Office Action responds that reliance on a large number of references in a rejection does not, without more, weigh against the obviousness of the claimed invention.

Richardson and Traut are additionally applied against Claim 9 in the present Office Action.

Richardson is cited to teach marking cables where marking fluid is subjected to pressure air (gas) in the reservoir (coloring agent supply source) and it is alleged to be obvious to combine the various teachings because Richardson teaches it helps the fluid to flow from the reservoir to the nozzles. When the valve between the source and the nozzle is open, the pressure gas inherently

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biases the coloring agent to spout toward the outer surface of the electric cable.

The Traut reference is cited in rejecting Claim 9, as showing a device for marking a cable with ink jet printer (nozzles) and cutting the cable afterward, and it is alleged it would have been obvious to replace the marking unit of the Traut device with what the other references teach, because the other cited references teach their device is capable to mark the electric wire.

A summary of what the references teach and what they do not teach would reveal as follows.

A. Katzschner teaches:

1. Marking an article moving in one direction with a coloring agent of respective colors different from each other;
2. Use of a print head; and
3. Application of a pattern using a liquid jet.

Katzschner does not teach, as required in the present claims:

1. Use of multiple nozzles that eject different colors;
2. Separate and spaced nozzles; or
3. Each nozzle having a coloring agent supply source with a valve therebetween.

B. Gemelli teaches an apparatus for forming spiral stripes on a wire using:

1. Multiple nozzles that are arranged in a circumferential direction around the wire; and
2. Inking members that rotate around the wire to form stripes on the wire.

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Gemelli does not teach, as required in the present claims:

1. Separate and spaced nozzles that eject different colors that form spots on the outer surface of an article;
2. Use of separate and spaced nozzles having a coloring agent supply source with a valve therebetween; or
3. Each nozzle having a coloring agent supply source with a valve therebetween.

C. Kobayashi teaches:

1. Application of a liquid to a surface using a nozzle that has a valve between a reservoir and a nozzle;
2. Use of a valve to control opening and shutting off a flow path for a liquid;
3. A jetting head with a plurality of orifices through which a processing solution is jetted toward a photographic light sensitive material.

Kobayashi does not teach, as required in the present claims:

1. Spouting a plurality of coloring agents of respective specific amount, as a drop, to form spots on a wire;
2. Use of separate and spaced nozzles, each having a coloring agent supply source with a valve therebetween; or
3. Use of a plurality of separate and spaced nozzles that eject different colors.

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D. Richardson teaches:

1. Use of compressed air to transmit a marking fluid from a reservoir;
2. Formation of helical stripes on a wire; and
3. Annular troughs that form marking fluid reservoirs with a single cover plate.

Richardson does not teach, as required in the present claims:

1. The use of a plurality of separate and spaced nozzles to eject different colored material;
2. Separate and spaced nozzles where each nozzle has a coloring agent supply source with a valve therebetween; or
3. Spouting of a plurality of coloring agents of respective specific amount, as a drop, to form spouts on a wire.

E. Traut teaches:

1. Use of a device for marking a cable with a ink jet printer and cutting the cable afterwards; and
2. Use of UV curable inks and a pretreatment station; and

Traut does not teach:

1. Anything else that would cure the defects of the other references.

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It should be noted that the Gemelli reference, which is the primary reference used to show a plurality of nozzles, has nozzles circumferentially disposed about a wire that are rotatable to form a spiral stripe.

Claims 1 and 3 have been amended herein to provide that the plurality of separate and spaced nozzles "for each respective color" are provided, that in the present system the nozzles are "arranged in a longitudinal direction of an article being transferred" and to provide such nozzle having a "separate" coloring agent supply source to emphasize these distinctions.

None of the references or their combination teach or suggest such an arrangement as now claimed.

In view of the aforementioned amendments and accompanying remarks, Claims 1-9, as amended, are believed to be patentable and in condition for allowance, which action, at an early date, is requested.


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In the event that this paper is not timely filed, the applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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